

Claims

1. Input device, especially for a mobile telephone, comprising at least one cap (9) which, in order to configure at least one assigned key, is connected to a flexible carrier (7) such that an input signal is generated by pressing a key formed in this manner,

characterized in that

at least one mechanically stable fixing means (4) is arranged between a first plane (B) comprising at least one cap (9) and a second plane (A) of the flexible carrier (7) connected to the cap (9), such that the cap (9), with the flexible carrier (7), is configured in such a way that it can transmit force in a substantially punctual manner through a plane of the fixing means (4) and in that the fixing means (4), in one area of at least one terminal edge (15), is configured in such a way that it can secure the input device (1) in or on a housing.

2. Input device according to Claim 1,

characterized in that

the mechanically stable fixing means (4) is fashioned as a metal sheet.

3. Input device according to any one of the two preceding Claims,

characterized in that

the fixing means (4) is configured as a lattice with recesses, in particular in the form of punched holes, through which the individual keys can move within required limits in a direction of actuation (P).

4. Input device according to any one of the preceding Claims, characterized in that

the cap (9) has, in the area of the user interface (O) perpendicular to a direction of actuation (P) in at least one spatial direction, a dimension which is greater than an opening (6) in the fixing means (4).

5. Input device according to any one of the preceding Claims, characterized in that the cap (9) is configured on an operable exterior or user interface (O) to project over the respective recess (6) and to protrude through the recesses.

6. Input device according to any one of the preceding Claims, characterized in that the cap (9) has, at least in one sectional plane parallel to the direction of actuation (P), an approximately mushroom-like cross-sectional form.

7. Input device according to any one of the preceding Claims, characterized in that projections (10) of the flexible carrier (7) are configured to protrude through the recesses (6) in the stable fixing means (4) and are covered by the caps (9) fixed on each of the projections (10).

8. Input device according to any one of the preceding Claims, characterized in that at least one terminal edge of the fixing means (4) is configured as a type of overlapping periphery (18) and/or flange (16) for securing the input device (1) in or on a housing.

9. Input device according to the preceding Claim, characterized in that

two respectively opposing terminal edges (15) of the fixing means (4) are configured as a type of overlapping periphery (18) and/or flange (16).

10. Input device according to any one of the preceding Claims, characterized in that
a fixing means (4) is inserted loosely into the respective housing, especially where the span widths or opening widths of a housing aperture (3) or of a keyboard opening are small.

11. Input device according to any one of the preceding Claims, characterized in that
the fixing means (4) is connected to the housing rigidly and/or in one piece, whereby the fixing means (4) is preferably configured as a punched and bent sheet-metal part.

12. Input device according to any one of the preceding Claims, characterized in that
the fixing means (4) and an associated housing part (2, 2a) are configured from one material and are manufactured in one piece in an essentially joint production step.

13. Input device according to any one of the preceding Claims, characterized in that
through the use of a fixing means (4), a three-dimensional form of keypad surface or user interface (0) is achieved.

14. Input device according to the preceding Claim, characterized in that
the fixing means (4) is configured as an ESD protection.

15. Input device according to the preceding Claim, characterized in that

an interspace is shaped according to design criteria.

16. Module for inputting signals of an electrical and/or mechanical form, characterized in that it comprises an input device (1) according to one or more of the preceding Claims.

17. Mobile telephone or other transmit and/or receive unit for the transmission and/or representation of data in the form of text and/or image data with or without sound, which data is encoded as elements of a set of data to be transmitted in conformance with the same or different standards, characterized in that this device comprises an input device according to any one of the preceding Claims 1 to 15 and/or a module according to the preceding Claim and is configured especially as a user terminal.

18. Method for the production of an input device, especially according to one or more of the preceding Claims, wherein a flexible carrier (4) is produced with at least one cap (9) for configuring at least one key, characterized in that the flexible carrier (7) comprising at least one projection (10) is partially guided through a recess (6) of a fixing means (4), and a cap (9), especially as the result of a thermoplastic shaping and/or reshaping process, is molded on the flexible carrier (7) after the fixing means (4) and the flexible carrier have been assembled.

19. Method according to the preceding Claim, characterized in that

the cap is produced as a single part from, in particular, a translucent material and is connected to the flexible carrier.

20. Method according to any one of the two preceding Claims, characterized in that
the at least one cap (9) is fixed to and/or on a projection (10) of the flexible carrier (7), for which purpose one or more of the known methods of bonding, welding and/or form-locking connection, *inter alia* with or without thermal treatment, or combinations thereof is/are used.